

CLAIMS

What is claimed is:

1. A drive shaft assembly for interconnecting a driving component and a driven component, comprising:

a first shaft;

a second shaft engaging said first shaft for enabling torque transmission and relative axial sliding motion therebetween; and

a joint component of a universal joint operably interconnecting one of said first and second shafts to one of the driving and driven components, said joint component is both rotatable through a specified range of rotation and is fixed from axial movement relative to one of said second shaft, the driving component and the driven component.

2. The drive shaft assembly of claim 1, wherein said joint component includes axial grooves and said second shaft includes an end portion having radially extending axial teeth for engaging said grooves and thereby enabling said specified range of relative rotation.

3. The drive shaft assembly of claim 2, wherein said grooves are formed within a bore of said joint component and said teeth extend outward from said end portion, whereby said end portion is received into said bore for enabling engagement between said teeth and said grooves.

4. The drive shaft assembly of claim 2, wherein said grooves are formed in an outer circumferential surface of said joint component and said teeth extend radially inward from said end portion, whereby said joint component is partially received into said end portion for enabling engagement between said teeth and said grooves.

5. The drive shaft assembly of claim 2, further comprising a ring engaged with a ring groove of one of said joint component and said second shaft for fixing said joint component and said second shaft from relative axial motion therebetween.

6. The drive shaft assembly of claim 1, wherein said joint component includes axial grooves and one of the driving and driven components includes radially extending axial teeth for engaging said grooves and thereby enabling said specified range of relative rotation.

7. The drive shaft assembly of claim 6, wherein said grooves are formed within a bore of said joint component and said teeth extend radially outward from one of the driven and driving components, whereby one of said driven and driving components is received into said bore for enabling engagement between said teeth and said grooves.

8. The drive shaft assembly of claim 6, wherein said grooves are formed along a stub end of said joint component and said teeth extend radially inward within a bore of one of the driven and driving components, whereby said stub end is partially received into said bore for enabling engagement between said teeth and said grooves.

9. The drive shaft assembly of claim 6, further comprising a ring engaged with a groove of one of said joint component, the driven component and the driving component for fixing said joint component and one of the driven component and driving component from relative axial movement therebetween.

10. The drive shaft assembly of claim 1, wherein said joint component is a universal joint yoke.

11. The drive shaft assembly of claim 1, wherein said second shaft includes a stub end interconnected thereto for operably interconnecting said joint component and said second shaft.